

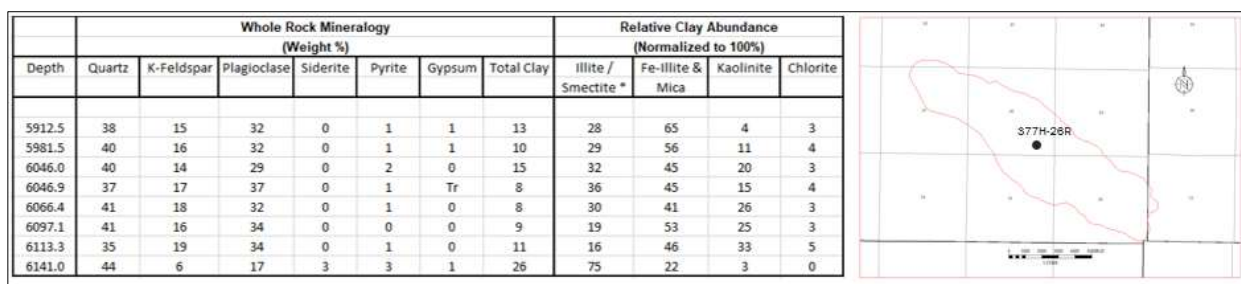
## ELK HILLS 26R PROJECT

### Monterey Formation 26R Core Analysis

Monterey Formation 26R:

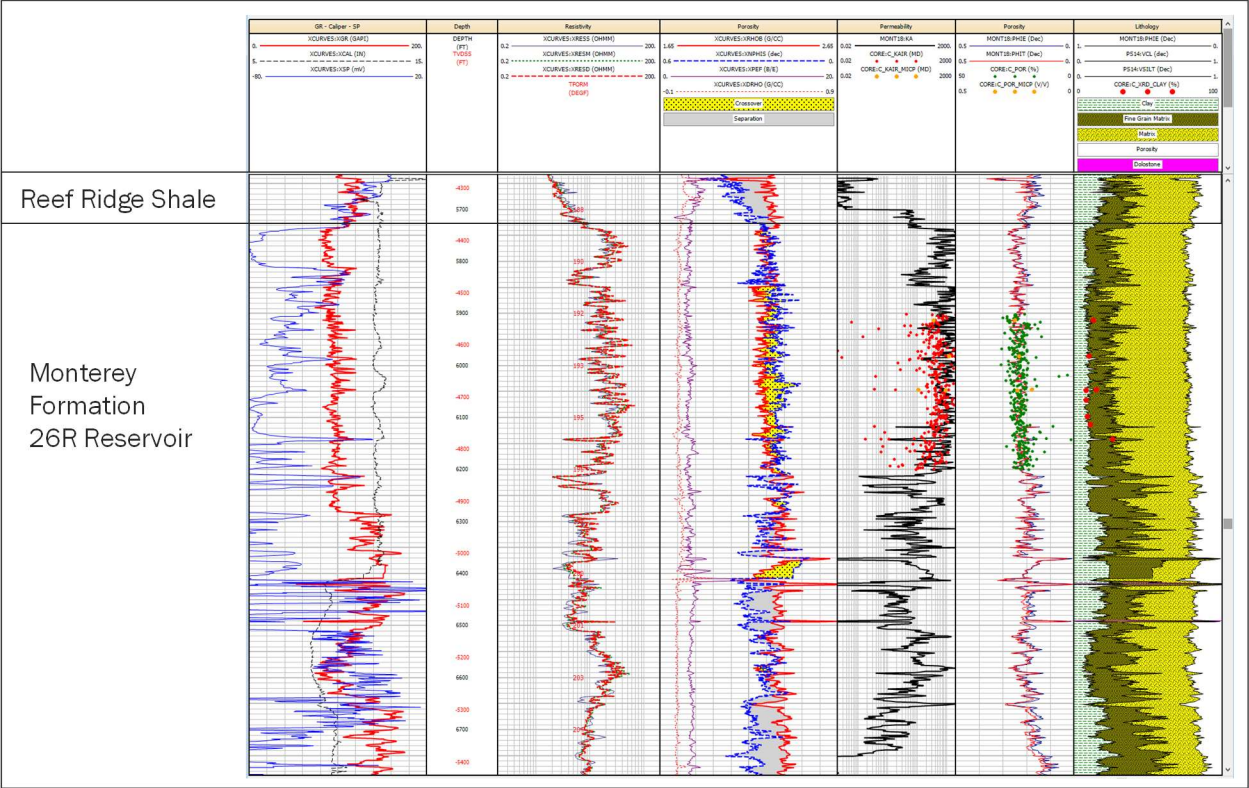
X-ray diffraction data has been compiled and compared from 9 wells with a total of 108 data points. Clay speciation has been found to be consistent throughout the AoR. Well 377H-26R (Figure 13) provides an example of the mineralogy for the reservoir. Clean reservoir sand intervals have an average of 39% quartz, 49% potassium feldspar, albite and oligoclase as well as 12% total clay.

**Figure 1: Monterey Formation 26R sand mineralogy from well 377H-26R.**

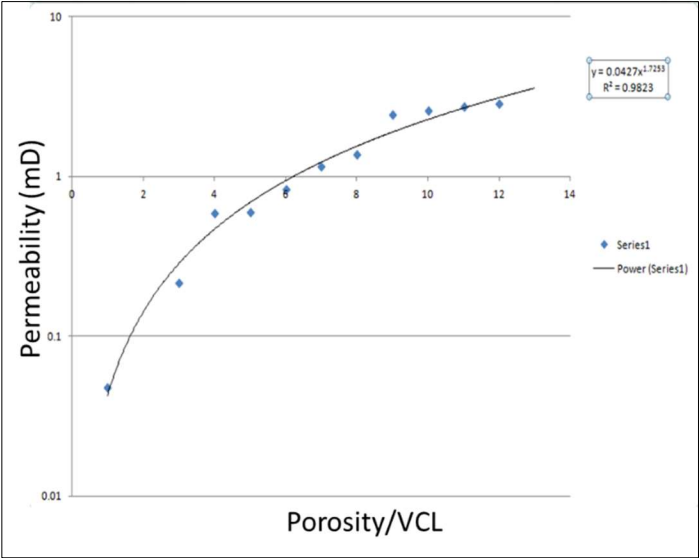


### Porosity and Permeability

Porosity, facies (sand and shale), and clay volume are derived from the open hole well logs (Figure 2). These values, that have a one-foot resolution, are upscaled into the geological model and distributed using Gaussian random function simulation (kriging). Mercury Injection Capillary Pressure (MICP) permeability and porosity data from core analysis constrains the permeability function (Figure 2). Permeability is populated in the static model with the function utilizing the upscaled porosity and clay volume as inputs. Figure 2 shows the permeability distribution in the model.

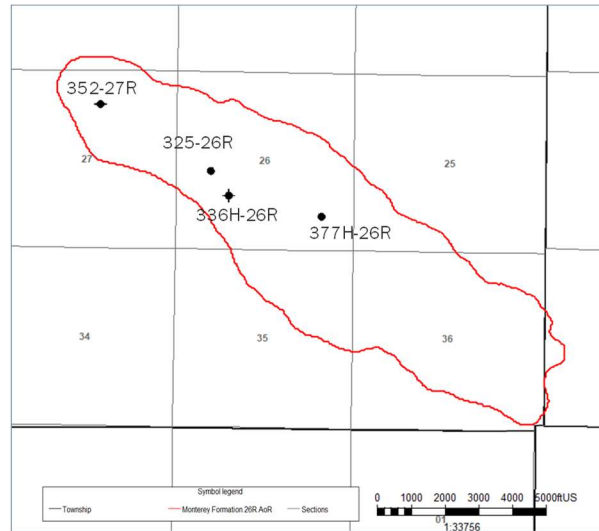


**Figure 2: Permeability function for the Monterey Formation 26R reservoir. The function was defined by mercury injection capillary pressure analysis. Continuous permeability for the static model is calculated based on open-hole well log derived porosity and clay volume.**



Example core report data of the MICP porosity and permeability from offset well 352-27R, 325-26R, 336H-26R and 377H-26R is shown below in Table 1. The location of wells are shown on the map in Figure 3.

**Figure 3: Location of wells 352-27R, 325-26R, 336H-26R and 377H-26R.**



**Table 1: Example core report data of the MICP porosity and permeability.**

Well Nam	DEPTH_CORE	ANALYSIS_LAB	ANALYSIS_DATE	CKHA	CPOR	PRESSAPPL	CAPMETHD	SYSTEM	DR_CAP_AIR_SAT
	ft			mD	%	psi			%
	MD	Textual data	Textual data	Numerical data	Numerical data	Numerical data	Textual data	Textual data	Numerical data
325-26R	6268	PETROLEUM TESTING SERVICE	5/1/1976	440	26.0	300	POROUS-PLATE	air-brine	16.9
325-26R	6275	PETROLEUM TESTING SERVICE	5/1/1976	606	26.3	300	POROUS-PLATE	air-brine	18.8
325-26R	6285	PETROLEUM TESTING SERVICE	5/1/1976	1390	27.5	300	POROUS-PLATE	air-brine	10.7
325-26R	6291	PETROLEUM TESTING SERVICE	5/1/1976	2440	27.4	300	POROUS-PLATE	air-brine	10.8
325-26R	6297	PETROLEUM TESTING SERVICE	5/1/1976	1770	29.8	300	POROUS-PLATE	air-brine	10.1
325-26R	6301	PETROLEUM TESTING SERVICE	5/1/1976	2090	28.3	300	POROUS-PLATE	air-brine	9.5
325-26R	6313	PETROLEUM TESTING SERVICE	5/1/1976	168	23.7	300	POROUS-PLATE	air-brine	25
325-26R	6319	PETROLEUM TESTING SERVICE	5/1/1976	312	26.4	300	POROUS-PLATE	air-brine	20.8
336H-26R	6457	CORE LABORATORIES	4/4/1955	632	22.0	50		air-brine	21
336H-26R	6271	CORE LABORATORIES	11/8/1954	123	24.3	8		oil-brine	40.3
336H-26R	6309	CORE LABORATORIES	11/8/1954	892	22.5	8		oil-brine	28.2
377H-26R	5981.5	CORE LABORATORIES	1/16/2004	469	25.0	54800	air-mercury		0.002082507
377H-26R	5912.5	CORE LABORATORIES	1/16/2004	142	26.0	54800	air-mercury		3.60E-04
377H-26R	6046.9	CORE LABORATORIES	1/16/2004	311	24.4	54800	air-mercury		-0.004654581
377H-26R	6097.1	CORE LABORATORIES	1/16/2004	329	24.8	54800	air-mercury		-0.004029666
377H-26R	6113.3	CORE LABORATORIES	1/16/2004	104	21.7	54800	air-mercury		-0.002711709
352-27R	6924	CORE LABORATORIES	11/8/1974	165	18.6	8	POROUS-PLATE	oil-brine	33.9
352-27R	7087	CORE LABORATORIES	11/8/1974	581	20.0	8	POROUS-PLATE	oil-brine	27.4
352-27R	7095	CORE LABORATORIES	11/8/1974	152	18.0	8	POROUS-PLATE	oil-brine	26.1
352-27R	7199	CORE LABORATORIES	11/8/1974	700	18.6	8	POROUS-PLATE	oil-brine	17.4
352-27R	7269	CORE LABORATORIES	11/8/1974	88	21.0	8	POROUS-PLATE	oil-brine	31.9